Econ4330 Seminar 6
Spring 2017

Inflation targeting

Consider a small open economy where

$$r = e + p_* - p \tag{1}$$
$$\rho - \bar{\rho} = (\rho_* - \bar{\rho}) + \dot{r}_e \tag{2}$$
$$\dot{r}_e = -\epsilon(r - \bar{r}) \tag{3}$$
$$y - \bar{y} = -\alpha_\rho(\rho - \bar{\rho}) + \alpha_r(r - \bar{r}) + \alpha_g(g - \bar{g}) \tag{4}$$
$$\dot{p} = \dot{p}_e + \gamma(y - \bar{y}) \tag{5}$$

All variables are in logs. e is the nominal exchange rate, p the price of home goods, p_* the price of foreign goods, r the real exchange rate, ρ the real interest rate, ρ_* the foreign real interest rate, y output and g government expenditures on home goods. A bar above a variable distinguishes its value in a full equilibrium. Dots indicate time rates of change and subscript e an expectation.

The country's exchange rate is floating. The central bank practices strict inflation targeting.The aim is to keep home goods inflation $\dot{p}$, as close to the target, $\bar{\pi}$, as possible.The bank takes the private sector expectation $\dot{p}_e$ as given. Hence, in effect it decides the real interest rate $\rho = i - \dot{p}_e$, i, being the nominal interest rate. We can then proceed as if ρ is the instrument used by the bank.

1. Explain briefly the conditions that must prevail for there to be real interest rate parity as in (2).

2. Assume in this question that expected inflation is equal to the inflation target. Suppose there is a temporary cut in government expenditure, g.What will be the central bank's response? Discuss the impact of the expenditure cut on nominal and real exchange rates. How does the effect depend on the different elasticities in the demand function?

3. A permanent cut in government expenditures can be seen as a simultaneous reduction in g and $\bar{g}$ by the same amount. Explain why a permanent cut in g implies a depreciation of the equilibrium real exchange rate $\bar{r}$

4. Suppose that suddenly it is discovered that the government's finances are in worse shape than expected. Expenditures are cut immediately and the cuts are meant to last. Discuss the short-run effect this will have on the exchange rates. Compare to the results in question 2.

5. If the nominal exchange rate were fixed permanently as for a small country in a large monetary union, how would the necessary change in the real exchange rate come about then?

6. Return to the case with a floating exchange rate. Suppose that it takes some time from the need for cuts is discovered to the cuts are implemented. Given that the central bank practices strict inflation targeting, what do you expect the nominal exchange rate to be at the time the cuts are implemented? How do you expect the nominal exchange rate to behave until then? Illustrate with a graph with time and exchange rate on the axis. (No formal derivations are expected).

7. Experience from economies with floating exchange rates seems to show that that the short-run effect of tough spending cuts is lower output and more unemployment. Discuss briefly how this may be explained within the model or by extending it.

8. Suppose the European Central bank cuts its interest rates because economic activity has been lower than expected in the Euro Area. Discuss to what extent European countries that have their own currencies should follow up with interest rate cuts of their own.

Discussion

Send proposals for discussion topics. Alternatively you may prepare questions regarding the course or old exams.